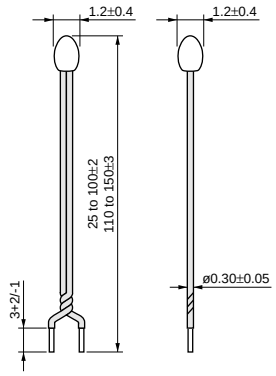
NTC Thermistors

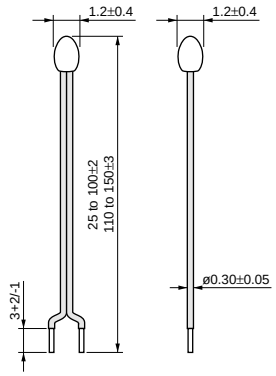
Temperature Sensor Thermo String Type

This product is a small flexible lead type NTC Thermistor with a small head and a thin lead wire.



The full length 25mm, 30 to 150mm Interval 10mm. (in mm)

NXFT15_1B Type(twist)



The full length 25mm, 30 to 150mm Interval 10mm. (in mm)

NXFT15_2B Type(without twist)

■ Features

1. High accuracy and highly sensitive temperature sensing is mode possible by the small size and high accuracy NTC Thermistor.
2. Narrow space temperature sensing is made possible by the small sensing head and the thin lead wire.
3. Flexibility and a wide variety of lengths (25 mm to 150mm) enables the design of flexible temperature sensing architectures.
4. This product is compatible with our 0402 (EIA) size chip Thermistor.
5. Excellent long-term aging stability
6. This is halogen free product. *
   * Cl= max.900ppm, Br=max.900ppm and Cl+Br=max.1500ppm
7. NXFT series are recognized by UL/cUL (UL1434, File No. E137188).

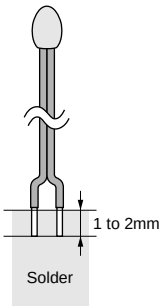
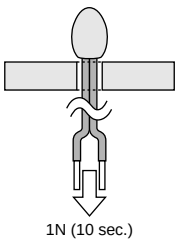
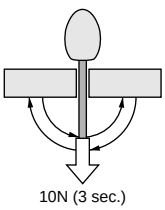
■ Applications

1. Temperature compensation for transistor, IC and crystal oscillator in mobile communications
2. Temperature sensor for rechargeable batteries
3. Temperature compensation of LCD
4. Temperature compensation in general use of electric circuits

Part Number	Resistance (25°C) (ohm)	B-Constant (25-50°C) (K)	B-Constant (25-80°C) (Reference Value) (K)	B-Constant (25-85°C) (Reference Value) (K)	B-Constant (25-100°C) (Reference Value) (K)	Operating Current for Sensor (25°C) (mA)	Rated Electric Power (25°C) (mW)	Typical Dissipation Constant (25°C) (mW/°C)	Thermal Time Constant (25°C) (s)
NXFT15XH103FA□B□□□	10k ±1%	3380 ±1%	3423	3431	3452	0.12	7.5	1.5	4
NXFT15WB473FA□B□□□	47k ±1%	4050 ±1%	4091	4097	4114	0.06	7.5	1.5	4
NXFT15WF104FA□B□□□	100k ±1%	4250 ±1%	4303	4311	4334	0.04	7.5	1.5	4

□ is the filled with lead shape (1: twist, 2: without twist).
□□□ is the filled with Total-length codes. (25mm, 30 to 150mm interval 10mm, ex. 050=50mm)
Operating Current for Sensor rises Thermistor's temperature by 0.1°C
Rated Electric Power shows the required electric power that causes Thermistor's temperature to rise to 30°C by self heating, at ambient temperature of 25 °C.
Operating Temperature Range: -40°C to +125°C

Temperature Sensor Thermo String Type Specifications and Test Methods

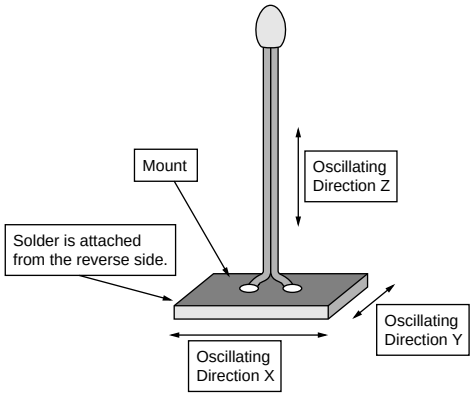
No.	Item	Specifications	Test Methods
1	High Temperature Storage Test	· Resistance (R25°C) fluctuation rate: less than ±1%. · B-Constant (B25/50°C) fluctuation rate: less than ±1%.	125±2°C in air, for 1000 +48/-0 hours without loading.
2	Low Temperature Storage Test		-40 +0/-3°C in air, for 1000 +48/-0 hours without loading.
3	Humidity Storage Test	· Resistance (R25°C) fluctuation rate: less than ±2%. · B-Constant (B25/50°C) fluctuation rate: less than ±1%.	60±2°C, 90 to 95%RH in air, for 1000 +48/-0 hours without loading.
4	Temperature Cycle		-40 +0/-3°C, 30 minutes in air +25±2°C, 10 to 15 minutes in air +125±2°C, 30 minutes in air + 25 +2/-0°C, 10 to 15 minutes in air (1 cycle) Continuous 100 cycles, without loading.
5	High Temperature Load		85±2°C in air, with 'Operating Current for Sensor' for 1000 +48/-0 hrs.
6	Insulation Break - down Voltage	· No damage electrical characteristics at DC100 V, 1 min.	2mm length of coating resin from the top of Thermistor is to be dipped into beads of lead (Pb), and DC100V 1 minute is applied to circuit between beads of lead (Pb) and lead wire.
7	Resistance to Soldering Heat	· Resistance (R25°C) fluctuation rate: less than ±1%. · B-Constant (B25/50°C) fluctuation rate: less than ±1%.	Both lead wires are dipped into 350±10°C solder for 3.5±0.5 seconds, or 260±5°C solder for 10±1 seconds according to Fig-1 (solder <JIS Z 3282 H60A>).  Fig-1
8	Solderability	More than 90% of lead wire surface shall be covered by solder.	Both lead wires are dipped into flux (25wt% colophony <JIS K 5902> isopropyl alcohol <JIS K 8839>) for 5 to 10 seconds. Then both lead wires are dipped into 235±5°C solder <JIS Z 3282 H60A> for 2±0.5 seconds according to Fig-1.
9	Lead Wire Pull Strength	· Resistance (R25°C) fluctuation rate: less than ±1%. · B-Constant (B25/50°C) fluctuation rate: less than ±1%.	The lead wire shall be inserted in a ø1.0mm hole until resin part contacts with a substrate as shown in fig.-2, and 1N force for 10 seconds shall be applied to the lead wire.  Fig-2
10	Lead Wire Bending Strength	· Lead wire does not break.	Hold the lead wires as in Fig-3. Bend by 90 degrees and again bend back to the initial position. Then bend to the other side by 90 degrees and again bend back to the initial position. After bending process, 10N force for 3 seconds shall be applied to the lead wire.  Fig-3

* · R25 is zero-power resistance at 25°C.
· B25/50 is calculated by zero-power resistance of Thermistor in 25°C -50°C.
· After each test, NTC Thermistor should be kept for 1 hour at room temperature (normal humidity and normal atmospheric pressure).

Continued on the following page.

Temperature Sensor Thermo String Type Specifications and Test Methods

Continued from the preceding page.

No.	Item	Specifications	Test Methods
11	Free Fall	· Resistance (R25°C) fluctuation rate: less than ±1%. · B-Constant (B25/50°C) fluctuation rate: less than ±1%. · No visible damage at resin part.	NTC Thermistor shall be dropped without any force onto concrete floor from 1 meter height one time.
12	Vibration		NTC Thermistor shall be fixed to the vibration test equipment. Vibration of total 1.5 mm amplitude, Frequency sequence of 10Hz - 55Hz - 10Hz in 1 minute, shall be applied for right angled 3 directions for each 2 hours duration. 

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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А